LIST OF CONTENTS

NUMBER 1

J. D. R. STOCK, I. H. DUNBAR, S. A. RAMSDALE, S. SIMONS and M. M. R. WILLIAMS — 1 The numerical implementation of multicomponent aerosol modelling

J. M. PUTNEY — 9 A nodal expansion method for fast reactor calculations in hexagonal geometry

I. PÁZSIT — 25 Duality in transport theory

Technical Notes

M. A. FONTELOS and R. M. WALDMAN — 43 Use of excore epithermal detectors in pulsed-source experiments

R. M. WALDMAN, A. GOMEZ and J. J. PIÑEYRO — 49 The reactivity worth of one or two Cd plates in an MTR-fuel-type reactor

A. GALPERIN — 53 Gd burnable poison system for reactivity control of the first cycle of a PWR

59 Current Papers in Nuclear Energy

I Software Survey Section

NUMBER 2

Notice to Contributors — i

Editorial — ii Preparation and Submission of Typescripts for Direct Reproduction

O. GLÖCKLER and I. PÁZSIT — 63 Spatial noise-source reconstruction

D. M. LENEVEU — 77 Response function of the convection–dispersion equations describing radionuclide migration in a finite medium

J. GADÓ and F. SCHMIDT — 83 Solution of the neutron diffusion equation in hexagonal geometries

F. C. DA SILVA, S. WAINTRAUB, Z. D. THOMÉ and A. C. M. ALVIM — 99 The pseudo-harmonics perturbation method: application to a PWR

Technical Note

A. YA. TEMKIN — 107 A comparison of the ^{232}Th–^{235}U and ^{232}Th–^{233}U PHWRs

111 Press Release

I Software Survey Section

NUMBER 3

N. S. RIYAIT and R. T. ACKROYD — 113 The finite-element method for multigroup neutron transport: anisotropic scattering in 1-D slab geometry

T. J. DOWNAR — 135 Reactivity space analysis of PWR core depletion

G. T. PARKS and J. D. LEWINS — 145 Quadratic reactivity fuel-cycle model stability

D. J. JENSEN and C. J. RADKE — 153 The role of a bentonite-based packing in limiting steady radionuclide release from an underground high-level waste repository

Technical Note
A. N. VERMA, M. GOSWAMI, F. AHMED and L. S. KOTHARI — 159 Elastic scattering of thermal neutrons from ^{7}Li

S. A. EL WAKIL, H. M. MACHALI, M. MADKOUR and E. A. SAIED — 161 An operational method for the particle slowing-down problem

I Software Survey Section

NUMBER 4

G. PALMIOTTI — 167 The 'FRENCH' (Flux Reconstructed Explicitly by Neutronic Calculated Harmonics) method in multi-dimensional and multigroup theory

P. NELSON — 177 Closed linear one-cell functional spatial approximations

J. D. R. STOCK — 193 The removal time for an aerosol undergoing vapour condensation

L. A. OLVEY and E. E. LEWIS — 203 Accuracy comparisons for variational R, T and T^{-1} response matrix formulations

211 Book Reviews

213 Current Papers in Nuclear Energy

217 Press Releases from the NRPB

I Software Survey Section

V Patents Section

NUMBER 5

V. N. P. ANGHEL and H. GHEORGHIU — 219 An iteration strategy for response matrix theory codes

M. BENGHANEM and A. F. ROHACH — 227 Formulation of high order finite difference approximations to the 3-D neutron diffusion equation

M. BENGHANEM and A. F. ROHACH — 235 Analysis of high order finite difference approximations to the 3-D neutron diffusion equation

T. P. RIBEIRO CAMPOS and A. S. MARTINEZ — 241 The dependence of practical width on temperature

STEFAN TACZANOWSKI — 249 Physico-economical premises for the nuclear design of fissile breeding devices

Technical Notes

W. MATTHES — 257 Evaluation of global radiation damage data for (homogeneous) amorphous structure materials

H. P. RAGHAV — 263 Legendre expansion of neutron flux over entire multilayer slab geometry

269 Book Review

270 New Publication

271 Current Papers in Nuclear Energy

I Software Survey Section

NUMBER 6

A. GANDINI — 273 Perturbation method for fuel evolution and shuffling analysis

G. F. THOMAS — 283 Diffusional release of a single component material from a finite cylindrical waste form

H. R. DENTON — 295 The causes and consequences of the Chernobyl nuclear accident and implications for the regulation of U.S. nuclear power plants

Technical Notes

I. KAPPOS and G. B. BISHOP — 317 Some angular properties of the scattered photons for 1.43 MeV and 2.75 MeV source photons penetrating aluminium, steel and lead shields

A. K. JENA and O. P. SINGH — 321 Study of neutron noise transmission characteristics in finite non-multiplying media

S. GUARRO — 325 Nuclear power plant diagnosis

I Software Survey Section

V Patents Section

NUMBER 7

J. L. MUÑOZ-COBO and G. VERDÚ — 327 Neutron stochastic transport theory with delayed neutrons

R. OFEK — 351 On the neutron scattering transformation matrices

H. VAN DAM and P. F. A. DE LEEGE — 369 Minimum critical mass systems

Technical Note
G. T. PARKS — 377 Stability of a multiple batch quadratic reactivity fuel cycle model

Letter to the Editors
THEODORE BESMANN and MARK P. MILLS — 387 Decommissioning: solutions for nuclear plants

389 Current Papers in Nuclear Energy

I Software Survey Section

NUMBER 8

J. W. DURKEE JR and C. E. LEE — 391 Exact solutions to gaseous flow time and temperature dependent parent and first-daughter fission-product plateout problems

A. SINHA, S. B. DEGWEKER and M. SRINIVASAN — 447 Neutron multiplication in ^{9}Be: a stochastic approach

Technical Notes
Y. GOTOH — 451 Response matrix of symmetric nodes with absorber rods

P. HILLION and G. NURDIN — 455 How good is the estimate of variance in Monte-Carlo computations?

Letter to the Editors
MARK P. MILLS — 459 Journalism and nuclear energy

I Software Survey Section

P. D. KRISHNANI — 463 Analysis of 2-D LWR benchmarks with an interface current method for solving the integral transport equation

D. MENEGHETTI and D. A. KUCERA — 473 Comparisons of PRD components for various EBR-II configurations

K. N. GRIMM and D. MENEGHETTI — 481 Time constants and feedback transfer functions of EBR-II subassembly types

J. W. MEADOWS, D. L. SMITH, M. M. BRETSCHER and S. A. COX — 489 Measurement of 14.7 MeV neutron-activation cross-sections for fusion

E. LORENZINI, M. SPIGA and M. A. CORTICELLI — 499 Thermal analysis of the heat exchanger for a spent nuclear fuel storage pool

Technical Notes

D. DENGIS and J. DEVOOGHT — 505 A bound of the reliability perturbations for Markovian analysis under uncertainty

G. T. PARKS — 511 Fuel cycle transients under power mismatch

517 Current Papers in Nuclear Energy

519 Announcement

I Software Survey Section

NUMBER 10

O. AGUILAR and G. POR — 521 Monitoring temperature reactivity coefficient by noise method in a NPP at full power

A. HÉBERT — 527 Development of the nodal collocation method for solving the neutron diffusion equation

M. AKIYAMA, Y. OKA, K. KANASUGI, H. HASHIKURA and S. KONDO — 543 Measurement and analysis of reaction rates in a large spherical depleted uranium pile surrounding a 14-MeV neutron source

G. GABOURY and A. A. HARMS — 555 Nonlinear isothermal nuclear reaction dynamics

Y. WATANABE, J. W. MEADOWS and D. L. SMITH — 563 An integral test of several fission cross-sections in the neutron spectrum produced by 7-MeV deuterons incident on a thick Be-metal target

S. B. DEGWEKER and A. SINHA — 571 Multiplicity spectrum of leakage neutrons from fissionable materials

577 Current Papers in Nuclear Energy

579 Corrigendum

I Software Survey Section

V Patents Section

NUMBER 11

F. I. IBITOYE, J. EMMETT and P. R. SMITH — 581 Modelling and parametric analysis of an advanced gas-cooled reactor

F. LESZCZYNSKI — 589 Neutron resonance treatment with details in space and energy for pin cells and rod clusters

J. W. MEADOWS, D. L. SMITH and R. D. LAWSON — 603 Differential measurements and an evaluation of the $^{59}Co(n,\alpha)^{56}Mn$ reaction cross-section

Technical Notes

C. NOTARI and Z. GARRAFFO — 615 Spatial self-shielding for heterogeneous cells

L. H. CLARO, A. C. M. ALVIM and Z. D. THOMÉ — 619 Calculation of intense localized perturbations with the pseudo-harmonics method

R. PAVIOTTI CORCUERA and M. DE MORAES — 623 Validation of actinide nuclear data from ENDF/B-V, INDL/A-83 and JENDL-2

C. ALP — 629 A perturbation theory for the non-linear system of neutron transport and burnup equations

631 Book Review

633 Current Papers in Nuclear Energy

635 Press Release from the NRPB

I Software Survey Section

V Patents Section

NUMBER 12

P. BHASKAR RAO and K. SRINIVASA RAGHAVAN — 637 A biaxial stress–strain response model for LMFBR reactor vessels

M. MALIK, F. AHMED and L. S. KOTHARI — 643 Study of space-dependent fast-neutron spectra and tritium breeding ratio in different assemblies of ^{7}Li, ^{6}Li and natural Li

A. F. ROHACH — 653 — A Legendre polynomial nodal model for 3-D diffusion problems

D. MENEGHETTI and D. A. KUCERA — 663 — Calculation of temperature coefficients of reactivity for EBR-II kinetic analyses

Technical Notes

S. OKAJIMA, M. NARITA and K. KOBAYASHI — 673 — Simple determination of low power on reflected reactors using the Feynman-α experiment

F. TOMÁŠEK — 677 — Determination of the neutron flux density at an unknown reactor power

A. GALPERIN and M. LEIBSON — 681 — Resonance absorption treatment in the calculation of the moderator void coefficient for tight lattice LWRs

Letter to the Editors

H. ZÄNKER — 685 — The influence of radio iodine sorption at the primary circuit surfaces on the calculation of the fuel rod integrity level in operating PWRs

687 — Book Review

I — Software Survey Section

V — Patents Section